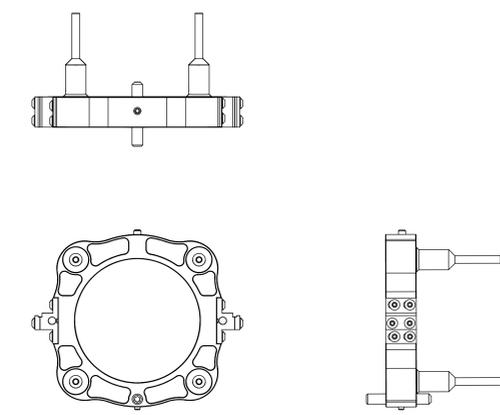
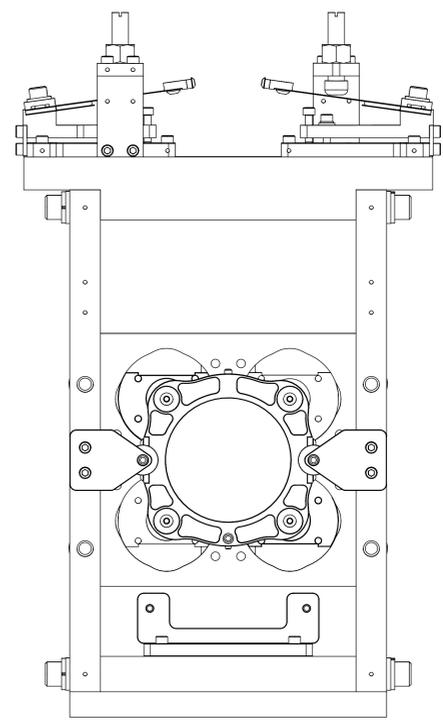
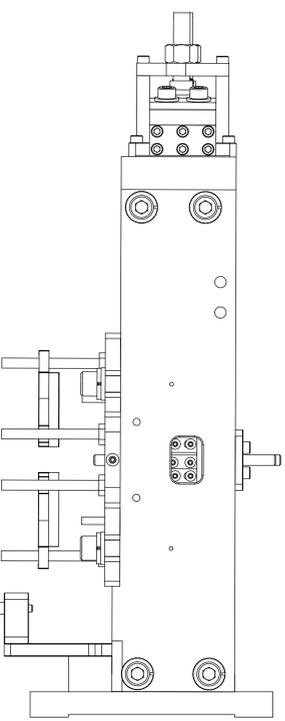
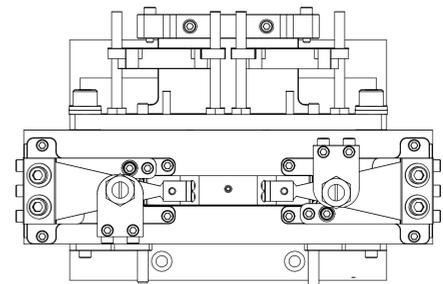
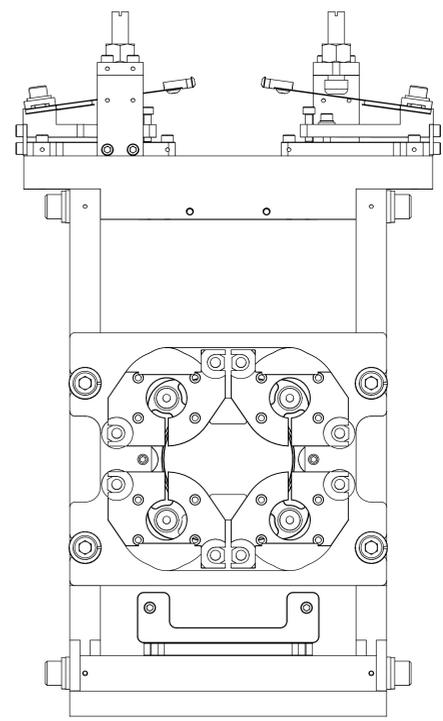
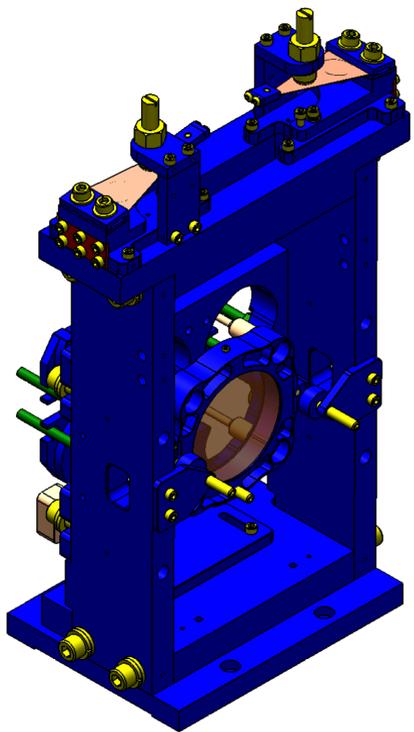


NOTES CONTINUED:  
 ③ SCRIBE, ENGRAVE, OR MECHANICALLY STAMP (NO INKS OR DYES) DRAWING PART NUMBER, REVISION (AND VARIANT OR TYPE IF APPLICABLE) ON NOTED SURFACE OF PART FOLLOWED ON THE NEXT LINE WITH A THREE DIGIT SERIAL NUMBER. SERIAL NUMBERS START AT 001 FOR THE FIRST ARTICLE AND PROCEED CONSECUTIVELY. USE MINIMUM 0.17" HIGH CHARACTERS, UNLESS THE SIZE OF THE PART DICTATES SMALLER CHARACTERS. A VIBRATORY TOOL MAY BE USED.  
 EXAMPLE: DXXXXXX-VY, TYPE-XX, S/N XXX



ITEM NO.	PART NUMBER	Revision	DESCRIPTION	MATERIAL	REQ	SPARE	TOTAL
13			Socket Set Screw Oval Point #2-56x0.0625	18-8 SSSL	1		1
12			Socket Set Screw Oval Point #4-40x0.25	18-8 SSSL	1		1
11			Socket Set Screw Oval Point #8-32x1	18-8 SSSL	1		1
10			Socket Button Head Cap Screw #2-56x0.188	18-8 SSSL	4		4
9			Socket Button Head Cap Screw #2-56x0.375	18-8 SSSL	8		8
8			Optics 2" x 3/8"	BK7 GLASS	1		1
7	D1001648	v1	Tip-Tilt Mirror - Nudge	PFA440 HP (PRESHRUNK)	1		1
6	D1002339	v1	Tip-Tilt BOSEM Magnet - Dia2x3mm	SmCo 2:17	4		4
5	D1002338	v1	Tip-Tilt BOSEM Flag - Dia2x3mm Magnet	PEEK	4		4
4	D1001493	v1	Tip-Tilt Inner Wire Clamp Magnet	SmCo 2:17	4		4
3	D1001483	v1	Tip-Tilt Outer Wire Clamp ALU	6061-T6 Al	2		2
2	D1001482	v1	Tip-Tilt Inner Wire Clamp ALU - 1.5mm	6061-T6 Al	2		2
1	D1001428	v2	Tip-Tilt Mirror Holder	6061-T6 Al	1		1

ITEM NO.	PART NUMBER	DESCRIPTION	MATERIAL	REQ	SPARE	TOTAL
3	D1100907	aLIGO HAM Tip-Tilt Suspension Assembly - Mirror Holder	N/A	1		1
2	D1100913	aLIGO HAM Tip-Tilt Suspension Assembly - Blades	N/A	2		2
1	D1100906	aLIGO HAM Tip-Tilt Suspension Assembly - Structure	N/A	1		1

ITEM NO.	PART NUMBER	Revision	DESCRIPTION	MATERIAL	REQ	SPARE	TOTAL
48	D1101430		Tip-Tilt DSUB Bracket Holder	6061-T6 Al	1		1
47			Socket Set Screw Oval Point #2-56x0.0625	18-8 SSSL	1		1
46			Socket Button Head Cap Screw #2-56x0.375	18-8 SSSL	8		8
45			Optics 2" x 3/8"	BK7 GLASS	1		1
44	D1001648	v1	Tip-Tilt Mirror - Nudge	PFA440 HP (PRESHRUNK)	1		1
43	D1002339	v1	Tip-Tilt BOSEM Magnet - Dia2x3mm	SmCo 2:17	4		4
42	D1002338	v1	Tip-Tilt BOSEM Flag - Dia2x3mm Magnet	PEEK	4		4
41	D1001493	v1	Tip-Tilt Inner Wire Clamp Magnet	SmCo 2:17	4		4
40	D1001483	v1	Tip-Tilt Outer Wire Clamp ALU	6061-T6 Al	2		2
39	D1001482	v1	Tip-Tilt Inner Wire Clamp ALU - 1.5mm	6061-T6 Al	2		2
38	D1001428	v2	Tip-Tilt Mirror Holder	6061-T6 Al	1		1
37			Socket Button Head Cap Screw #4-40x0.125	18-8 SSSL	2		2
36			Socket Button Head Cap Screw #2-56x0.188	18-8 SSSL	8		8
35			Socket Head Cap Screw #8-32x0.5	18-8 SSSL	4		4
34			Socket Head Cap Screw #4-40x0.3125	18-8 SSSL	14		14
33			Hex Thick Nut 1/4	18-8 SSSL	2		2
32			Lock Washer Spring Regular #4	18-8 SSSL	2		2
31			Flat Washer Type B Narrow #4	18-8 SSSL	2		2
30			Flat Washer Type B Narrow #8	18-8 SSSL	4		4
29	D1100345	v1	Tip-Tilt Blade Damping O-ring - BS013	FLUOROELASTOMER	2		2
28	D1002228	v1	Tip-Tilt Blade O-ring Ledge	Beryllium Copper, UNS C17200	2		2
27	D1002227	v1	Tip-Tilt Blade O-ring Spacer	6061-T6 Al	2		2
26	D1001491	v1	Tip-Tilt Blade ECD Screw	18-8 SSSL	2		2
25	D1001486	v1	Tip-Tilt Blade ECD Holder	6061-T6 Al	2		2
24	D1001485	v1	Tip-Tilt Blade ECD Riser	6061-T6 Al	2		2
23	D1001480	v1	Tip-Tilt Blade Clamp	6061-T6 Al	2		2
22	D1001481	v1	Tip-Tilt Wire Clamp Top - Blade Tip	6061-T6 Al	2		2
21	D1001451	v1	Wire Clamp - Blade Tip	6061-T6 Al	2		2
20	D1000765	v2	Tip-Tilt Blade 254um	Beryllium Copper, UNS C17200	2		2
19	D1002226	v1	Tip-Tilt Pitch Adjuster - 8 deg	6061-T6 Al	2		2
18	D1000810	v1	Tip-Tilt Blade Hinge Plate	304 SSSL	2		2
17	D1000766	v1	Tip-Tilt Base Pitch Adjuster	6061-T6 Al	2		2
16			Socket Set Screw Oval Point #4-40x0.25	18-8 SSSL	3		3
15	D060109		BOSEM Adjuster Shaft	TITANIUM	8		8
14			Socket Head Cap Screw #4-40x0.4375	18-8 SSSL	28		28
13			Socket Head Cap Screw 1/4-20x1	18-8 SSSL	12		12
12			Lock Washer Spring Regular 1/4	18-8 SSSL	12		12
11			Flat Washer Type B Narrow 1/4	18-8 SSSL	12		12
10			Socket Set Screw Oval Point #8-32x1	18-8 SSSL	5		5
9	D1100346	v1	Tip-Tilt Mirror Holder ECD	6061-T6 Al	4		4
8	D1001511	v2	Tip-Tilt BOSEM Backplate - Upper Left	6061-T6 Al	2		2
7	D1001496	v2	Tip-Tilt BOSEM Backplate - Upper Right	6061-T6 Al	2		2
6	D1001492	v2	Tip-Tilt Structure ECD Bracket	6061-T6 Al	2		2
5	D1001484	v1	Tip-Tilt DSUB Bracket	PEEK	1		1
4	D1001450	v2	Tip-Tilt BOSEM Backplane	6061-T6 Al	1		1
3	D1000767	v2	Top Plate, Opposite dy=35mm	6061-T6 Al	1		1
2	D1000772	v2	Tip-Tilt Structure Side	6061-T6 Al	2		2
1	D1000768	v2	Tip-Tilt Structure Base	6061-T6 Al	1		1

NOTES AND TOLERANCES: (UNLESS OTHERWISE SPECIFIED)  
 1. INTERPRET DRAWING PER ASME Y14.5-1994.  
 2. REMOVE ALL SHARP EDGES, R.02 MIN.  
 3. DO NOT SCALE FROM DRAWING.  
 4. ALL MACHINING FLUIDS MUST BE FULLY SYNTHETIC, FULLY WATER SOLUBLE AND FREE OF SULFUR, SILICONE, AND CHLORINE.

DIMENSIONS ARE IN: .XX ±, .XXX ±, ANGULAR ± °

MATERIAL: N/A, FINISH: N/A μinch

California Institute of Technology  
 ADVANCED LIGO  
 SYSTEM: HAM ISI, SUB-SYSTEM: ISC

DESIGNER: BJJ Stagnolen, DRAFTER: BJJ Stagnolen, CHECKER: APPROVAL: SCALE: 1:2, DWG. NO.: E, PROJECTOR: SHEET 1 OF 1

Part Name: aLIGO Tip-Tilt Mirror Assembly  
 REV: v3